Derived From Triangle

Quadrilateral Inequality Theorem

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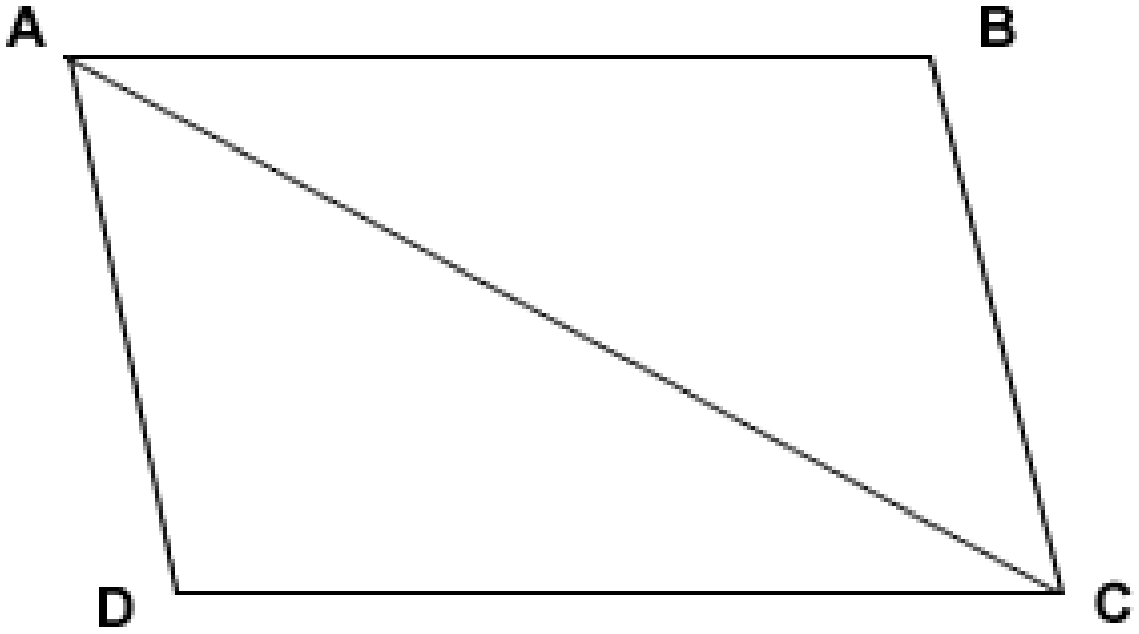


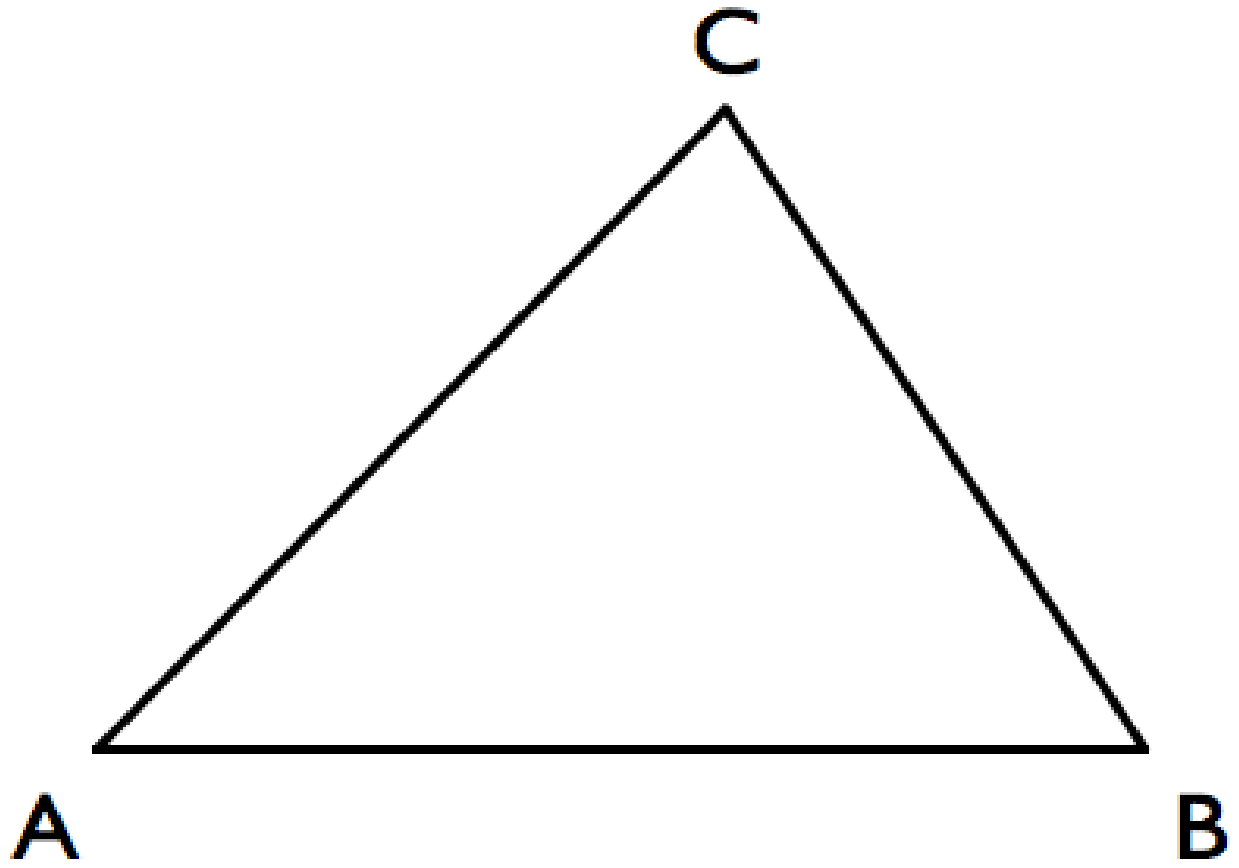
According to this Theorem:

In a quadrilateral the sum of any three side is always greater than the third side

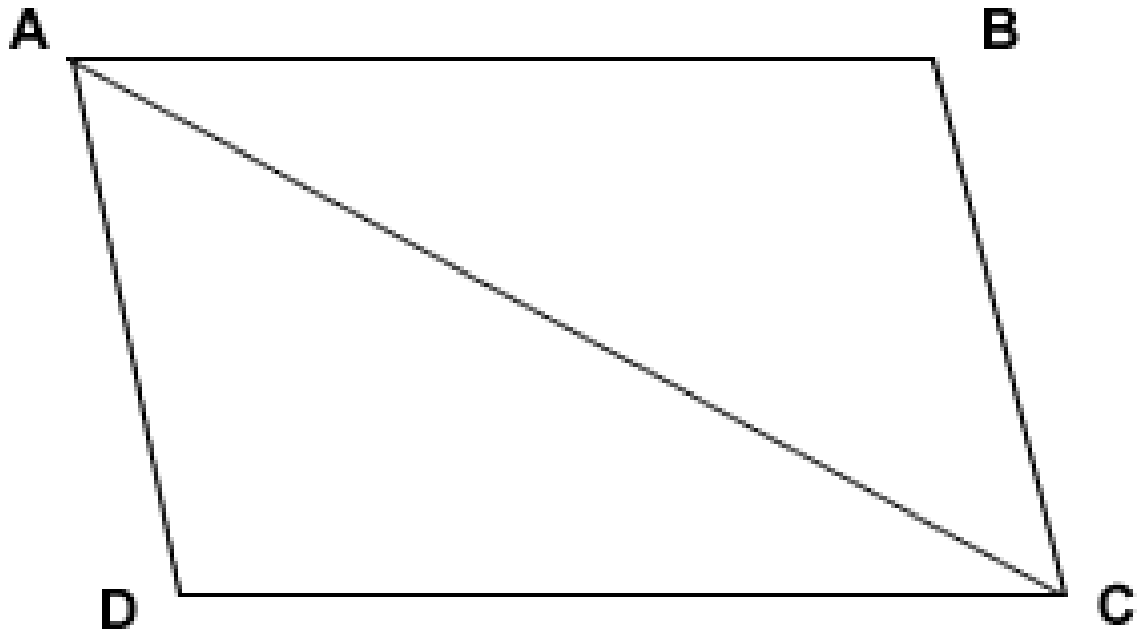
$$AB + BC + CD > DA$$

Proof

This can be proved by using the Triangle Inequality Theorem that states that in a triangle the sum of any two sides is always greater than the third side.



$AB + BC > AC$



In ΔABC

$AB + BC > AC$ **[1]**

In ΔADC

$AC + DC > AD$ **[2]**

Adding [1] and [2]

$AB + BC + AC + DC > AC + AD$

$AB + BC + DC > AD$

Hence Proved